GAPP

FY 2003 Information Sheet

GAPP is jointly supported by NOAA and NASA and is expected to continue until 2007. Initiatives are solicited which have a geographical focus on the western USA or the Mississippi River Basin, and address the following GAPP FY2003 priorities:

Hydrometeorology of Orographic Systems: Scientific investigations are solicited to examine the orographic influence of the Western Cordillera on the hydrometeorology of the western US. Studies of effects of the mountains on the cold-season hydrological cycle and basin water budget are encouraged. Research elements can include: hydrometeorological processes in the western Cordillera over a range of scales, large-scale flow and mesoscale processes; the effects of topography on ENSO episodes; lake effects on mesoscale circulation, such as those related to the Great Salt Lake and the effect of maritime mountains along the West Coast.

CEOP and model transferability: The GEWEX Coordinated Enhanced Observing Period (CEOP) aims to acquire datasets globally and study the water cycle in the global scale. CEOP will run from 2002-2007, with the data acquisition period from 2002-2004. Specific CEOP research objectives include the role of anomalous heat sources and sinks over land and how they are connected from one area to another. The GAPP contribution to CEOP will center on model transferability, in which models from data rich regions will be applied to data sparse regions and across different climate zones. GAPP studies also focus on using CEOP data in process understanding of the land surface and relevant feedbacks at timescales with respect to the regional and larger-scale climate system. Possible regions may include: a relatively simple geographic region without major topography, such as the Mississippi River basin; the SAGE (Saskatchewan and surrounding Area GEWEX Experiment) region, in the Canadian Prairies; and the La Plata River Basin in South America.

Predictability in Land Surface Processes: GAPP seeks to better understand the contributions of land surface processes to the sources and limits of predictability in the water cycle. The most important new contribution will be understanding and simulation of the effects of vegetation on the seasonal cycle of precipitation. Continuing efforts will focus on the effects of topography on convective precipitation and horizontal flow within catchments, the role of snow/ice and frozen soil in coupled and uncoupled models, the seasonal cycle of snow and soil moisture, and soil moisture initialization. Improved understanding of these land memory processes will lead to integration of predictability into prediction systems. Modeling studies of land memory processes and data set development to support model development and applications are two priorities.